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| APPLICATION NO.        | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------|-------------|----------------------|---------------------|------------------|
| 09/673,275             | 10/13/2000  | Michael A. Vaudrey   | 10551/147           | 3531             |
| 25096                  | 7590        | 07/11/2007           | EXAMINER            |                  |
| PERKINS COIE LLP       |             |                      | LEE, PING           |                  |
| PATENT-SEA             |             |                      | ART UNIT            | PAPER NUMBER     |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/673,275             | VAUDREY ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Ping Lee               | 2615                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 04 June 2007.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 38-44, 53 and 55-57 is/are pending in the application.  
 4a) Of the above claim(s) 53 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 38, 41, 42, 55 and 57 is/are rejected.  
 7) Claim(s) 39, 40, 43, 44 and 56 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 41 and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 41 recites the limitation "the first and second vector accumulators" in lines

- 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 57 recites the limitation "the vector samples" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 38 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (US005811708A) in view of Sakai (JP 409214266A).

Regarding claims 38 and 55, Matsumoto discloses an audio system for optimizing playing of an audio program, which includes a preferred audio signal (vocal, for example) and a remaining audio signal (accompaniment, for example), for end users, which includes both hearing impaired and non-hearing impaired listeners, comprising: a first end user adjustable amplifier (65 as in Fig. 6a) and a second end user amplifier (65).

Matsumoto shows that the signals would be mixed in a predetermined mixing ratio (col. 3, lines 55-60), but Matsumoto fails to show how to maintain this ratio with the gain at the first or second end user amplifier is changed. Sakai teaches a correction circuit for receiving the vocal (by 6), the accompaniment (by 7) and the user adjusted volume level (by 10) and perform the calculation to adjust the gain of the amplifier for vocal signal. Although Sakai only teaches the adjustable gain amplifier for the vocal signal, the key of Sakai's invention is to maintain the mixing ratio between vocal and the accompaniment, so the voice would be mixed perfectly with the background music regardless how the singer performs. Sakai does not have an adjustable gain amplifier for only accompaniment. One skilled in the art would be motivated to have an adjustable amplifier for the accompaniment because it would allow the user to adjust the

accompaniment. One skilled in the art would have expected that the same logic used in Sakai for vocal signal and its adjustable amplifier could be applied the accompaniment and its amplifier without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify Matsumoto in view of Sakai by having a corrector circuit for maintaining the mixing ratio between vocal signal and the accompaniment in order to allow all listeners to hear the singing performance regardless how loud the singer performs.

6. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto and Sakai as applied to claim 38 above, and further in view of Christensen et al (hereafter Christensen) (US 4,885,792).

Regarding claim 42, Matsumoto modified in view of Sakai does not have a first and second bandpass filters for a plurality of user selectable frequency dependent amplification devices. It was commonly well known to general public that most of ordinary people does not have a perfect singing voice. So it would greatly benefit the performer to have an equalizer to adjust the vocal voice in a karaoke machine. It would also benefit the performer if the accompaniment could be equalizing according to his/her preference. Christensen teaches a general mixer (karaoke machine is a mixer which mixes vocal signal and the accompaniment) with equalizer for each sound source. Fig. 2 shows eight separate adjustable bands (inherently performed by a adjustable bandpass filter). Thus, it would have been obvious to one of ordinary skill in the art to further modify Matsumoto and Sakai in view of Christensen by utilizing

separate equalizer for each sound source input in order to allow the user the improve the karaoke performance and enhance the mixed output from the loudspeaker(s).

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 38 and 55 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 17 of U.S. Patent No. 6,311,155 (hereafter '155) in view of Sakai.

Regarding claims 38 and 55, claim 17 of '155 specified that the ratio between first audio signal and the second audio signal is maintained but fails to show a correction circuit as claimed. Sakai teaches a correction circuit for receiving a first (vocal, by 6), a second (the accompaniment, by 7) and the user adjusted volume level (by 10) and perform the calculation to adjust the gain of the amplifier for the first signal.

Although Sakai only teaches the adjustable gain amplifier for the first signal, the key of Sakai's invention is to maintain the mixing ratio between the first and the second signals, so they would be mixed perfectly regardless how the amplitude of any of the first and second inputs signals. Sakai does not have an adjustable gain amplifier for only the second input. One skilled in the art would be motivated to have an adjustable amplifier for the accompaniment because it would allow the user to adjust the accompaniment. One skilled in the art would have expected that the same logic used in Sakai for the first signal and its adjustable amplifier could be applied to the second signal and its amplifier without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify '155 in view of Sakai by having a corrector circuit for maintaining the mixing ratio between the first signal and the second signal in order to allow all listeners to hear the mixed signals clearly.

9. Claims 38 and 55 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 7 of U.S. Patent No. 6,442,278 (hereafter '278) in view of Sakai.

Regarding claims 38 and 55, claim 7 of '278 specified that the ratio between a preferred audio signal and the remaining audio signal is maintained but fails to show a correction circuit as claimed. Sakai teaches a correction circuit for receiving a first (vocal, by 6), a second (the accompaniment, by 7) and the user adjusted volume level (by 10) and perform the calculation to adjust the gain of the amplifier for the first signal. Although Sakai only teaches the adjustable gain amplifier for the first signal, the key of Sakai's invention is to maintain the mixing ratio between the first and the second

signals, so the they would be mixed perfectly regardless how the amplitude of any of the first and second inputs signals. Sakai does not have an adjustable gain amplifier for only the second input. One skilled in the art would be motivated to have an adjustable amplifier for the accompaniment because it would allow the user to adjust the accompaniment. One skilled in the art would have expected that the same logic used in Sakai for the first signal and its adjustable amplifier could be applied the second signal and its amplifier without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify '278 in view of Sakai by having a corrector circuit for maintaining the mixing ratio between the first signal and the second signal in order to allow all listeners to hear the mixed signals clearly.

10. Claims 38 and 55 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,650,755 (hereafter '755) in view of Sakai.

Regarding claims 38 and 55, claim 4 of '755 specified that the ratio between a voice signal and the remaining audio signal is maintained but fails to show a correction circuit as claimed. Sakai teaches a correction circuit for receiving a first (vocal, by 6), a second (the accompaniment, by 7) and the user adjusted volume level (by 10) and perform the calculation to adjust the gain of the amplifier for the first signal. Although Sakai only teaches the adjustable gain amplifier for the first signal, the key of Sakai's invention is to maintain the mixing ratio between the first and the second signals, so the they would be mixed perfectly regardless how the amplitude of any of the first and second inputs signals. Sakai does not have an adjustable gain amplifier for only the

second input. One skilled in the art would be motivated to have an adjustable amplifier for the accompaniment because it would allow the user to adjust the accompaniment. One skilled in the art would have expected that the same logic used in Sakai for the first signal and its adjustable amplifier could be applied the second signal and its amplifier without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify '755 in view of Sakai by having a corrector circuit for maintaining the mixing ratio between the first signal and the second signal in order to allow all listeners to hear the mixed signals clearly.

11. Claims 38 and 55 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-3 of copending Application No. 10/178,553 (hereafter '553) in view of Sakai.

This is a provisional obviousness-type double patenting rejection.

Regarding claims 38 and 55, claims 1-3 of '533 specified that the ratio between a center signal and the other audio signal is maintained but fails to show a correction circuit as claimed. Sakai teaches a correction circuit for receiving a first (vocal, by 6), a second (the accompaniment, by 7) and the user adjusted volume level (by 10) and perform the calculation to adjust the gain of the amplifier for the first signal. Although Sakai only teaches the adjustable gain amplifier for the first signal, the key of Sakai's invention is to maintain the mixing ratio between the first and the second signals, so the they would be mixed perfectly regardless how the amplitude of any of the first and second inputs signals. Sakai does not have an adjustable gain amplifier for only the second input. One skilled in the art would be motivated to have an adjustable amplifier

for the accompaniment because it would allow the user to adjust the accompaniment. One skilled in the art would have expected that the same logic used in Sakai for the first signal and its adjustable amplifier could be applied the second signal and its amplifier without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify '553 in view of Sakai by having a corrector circuit for maintaining the mixing ratio between the first signal and the second signal in order to allow all listeners to hear the mixed signals clearly.

12. Claims 38 and 55 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 9 of copending Application No. 10/713,262 (hereafter '262) in view of Sakai.

This is a provisional obviousness-type double patenting rejection.

Regarding claims 38 and 55, claim 9 of '262 specified that the ratio between a primary audio channel and the remaining audio channel is maintained but fails to show a correction circuit as claimed. Sakai teaches a correction circuit for receiving a first (vocal, by 6), a second (the accompaniment, by 7) and the user adjusted volume level (by 10) and perform the calculation to adjust the gain of the amplifier for the first signal. Although Sakai only teaches the adjustable gain amplifier for the first signal, the key of Sakai's invention is to maintain the mixing ratio between the first and the second signals, so they would be mixed perfectly regardless how the amplitude of any of the first and second inputs signals. Sakai does not have an adjustable gain amplifier for only the second input. One skilled in the art would be motivated to have an adjustable amplifier for the accompaniment because it would allow the user to adjust the

accompaniment. One skilled in the art would have expected that the same logic used in Sakai for the first signal and its adjustable amplifier could be applied the second signal and its amplifier without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify '262 in view of Sakai by having a corrector circuit for maintaining the mixing ratio between the first signal and the second signal in order to allow all listeners to hear the mixed signals clearly.

13. Claims 38 and 55 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 9 or 18 of copending Application No. 11/154,816 (hereafter '816) in view of Sakai.

This is a provisional obviousness-type double patenting rejection.

Regarding claims 38 and 55, claim 9 or 18 of '816 specified that the ratio between a first audio signal and the second audio signal is maintained but fails to show a correction circuit as claimed. Sakai teaches a correction circuit for receiving a first (vocal, by 6), a second (the accompaniment, by 7) and the user adjusted volume level (by 10) and perform the calculation to adjust the gain of the amplifier for the first signal. Although Sakai only teaches the adjustable gain amplifier for the first signal, the key of Sakai's invention is to maintain the mixing ratio between the first and the second signals, so they would be mixed perfectly regardless how the amplitude of any of the first and second inputs signals. Sakai does not have an adjustable gain amplifier for only the second input. One skilled in the art would be motivated to have an adjustable amplifier for the accompaniment because it would allow the user to adjust the accompaniment. One skilled in the art would have expected that the same logic used in

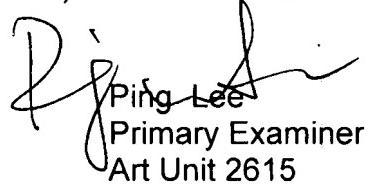
Sakai for the first signal and its adjustable amplifier could be applied the second signal and its amplifier without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify '816 in view of Sakai by having a corrector circuit for maintaining the mixing ratio between the first signal and the second signal in order to allow all listeners to hear the mixed signals clearly.

***Allowable Subject Matter***

14. Claims 39, 40 and 56 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
15. Claims 41 and 57 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ping Lee  
Primary Examiner  
Art Unit 2615

pwl